

# ITEMS OF INTEREST.

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## *Shots from the Profession.*

### MARSH GAS, OR CARBON, AND ITS AFFINITIES.

W. S. ELLIOTT, M. D., D. D. S.

On former occasions I have been pleased to offer papers to the *ITEMS OF INTEREST*, on the general subject of Chemistry, and on those features which distinguish the new from the old theories of chemical science; also on those properties of atoms which measure their powers and capabilities, and their relative values.

In further pursuing the subject certain differences present themselves which are made evident in the behavior of the atoms under given circumstances and conditions, the study of which will perhaps lead us more fully to understand the complications of function as indicated in the completeness of physiological expression.

Chemical affinity enters as a factor in the functionary process, but I am not aware that this form of force is in any way peculiar, though acting within the sphere of organic limits; all reactions are the same in kind, and governed by a similar law, whatever may be the circumstances under which they are manifested.

Classification is convenient for study, but no strict line of demarkation can be established—for the simple and complex are comparative terms and hold no positive definition.

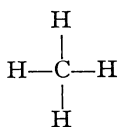
But it is within certain limitations, allied to so-called organic chemistry, that I propose to make my demonstrations and to offer examples of the play of affinities of the elements.

Carbon in this connection claims our special attention. It has properties which peculiarly fit it for the sphere in which it presides. Through its capabilities it becomes a basis substance for all forms of animal and vegetable being. It is the skeletal element, having great fixity—being infusible and insoluble. Its tendency is to remain solid while other elements are dissipated into gases at various elevations of temperature. This stability, therefore, renders it admirably adapted to the frame-work or skeleton on which are built the molecular forms

of organized bodies. Notwithstanding these properties, carbon is remarkably protean in its aspects—assuming varied forms; now as a crystal—the diamond; then as charcoal, graphite, lamp-black, coke, etc. This manifest variation of aspect leads us to study the forces which pervade the molecules and which govern the “togetherness” of the atoms. Under the law of atomicity, carbon is a tetrad, a number of four things. It has four bonds seeking satisfaction. It does not, however, as do many other elements, cry loudly for association; it will rest in at least considerable satisfaction with atoms of its own kind. In this, probably, lies its notable fixedness.

Hydrogen is the chemist’s zero element, being the lightest of them all—gaseous, pervasive and diffusible. Thus it appeals strongly to its opposite for association. Carbon and hydrogen are strongly antithetic and therefore they readily unite under certain circumstances to the complete satisfaction of the desires of either constituent.

Hydrogen is a monad, or ultimate atom, hence it requires four atoms to saturate the atom of carbon to the formation of a complete molecule. Such a combination may be graphically shown as follows:



*Marsh Gas,*

as are bubbles from stagnant water.

This is taken as a convenient basis for the consideration of the molecule combinations occurring in the organic kingdom, and it is to this department I wish to call attention. We must need go to the alphabet and learn the power of the letters before we shall fully understand the purport of our periods. Saturation in chemistry means a complete satisfaction of the existing bonds in a given molecule.

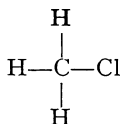
Thus we see in the molecule of marsh gas, every bond is closed and the molecule is saturated; or, if you entertain the theory of magnetic polarity, then we say neutrality is sought to be established by the co-mingling of the opposite energies. A molecule may exist, however, though the bonds are not all engaged; but in proportion as they are left open so are the affinities enhanced, or rather, the power to resist association is decreased; for instance, carbon monoxide is represented by only one atom of carbon and one of oxide. The latter being a diad could only engage two of the bonds of carbon, leaving two still open and ready for a further combination whenever the circumstances are favorable.

If carbon-oxide be symbolized by two molecules:



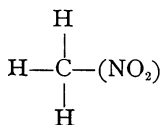
then it will be seen that the otherwise free bonds are neutralized by the union of the two carbon atoms—another exhibit of the disposition of the carbon to unite with itself. This self-satisfaction becomes the element of permanency, therefore the carbon compounds are exceedingly numerous throughout the domain of nature. Whoever has seen the bubbles arise from the depths of a stagnant water-bed well knows they contain that to which we have referred as marsh gas. The marsh gas molecule is otherwise named—hydria of methyl, or methane.

By leaving off one atom of hydrogen we have a compound radical, which is known as the methylic radical; and grouped as the atoms are, they together act as a simple element, bearing the symbol Me; and having only one free bond, this radical becomes a monad and behaves as such in all its relations. This association of the fourth atom of hydrogen causes the complete or saturated molecule to be termed the methylic hydride. In order to bring about satisfaction of the radical, it is not necessary that the particular element, hydrogen, should enter into the combination; other elements, or other radicals, simple or compound, having univalent properties, may take its place, as may be seen by the following formula, wherein an atom of chloride is substituted to the production of the



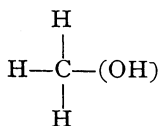
*Methylic chloride,*

or mono-chloride of methyl; or, by the substitution of the nitric acid radical ( $\text{NO}_2$ ) to the production of the



*Methylic nitrite;*

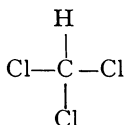
or by the substitution of the hydroxyl radical ( $\text{HO}$ ), to the production of



*Methylic alcohol, or wood spirits.*

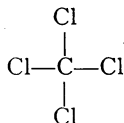
It will moreover appear that the other atoms of hydrogen in the methylic group can be replaced as well; thus, the mono-chloride of methyl may become the di-chloride by the substitution of another atom of chloride. This substance has been proposed as an anæsthetic agent.

If now we replace one more atom of hydrogen in our methylic compound with another of chloride, we have the tri-chloride of methyl, or our common



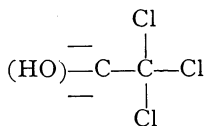
*Chloroform.*

The last atom of hydrogen may also be replaced by chloride, and we will then have the



*Tetra-chloride of methyl.*

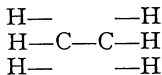
If instead of this last atom of chloride we substitute another atom of carbon, and the open bonds closed by the hydrating radical HO, we will have produced



*Chloral hydrate.*

It will no doubt occur to all that, since the methylic radical has one open bond, and there exists a strong tendency for the carbon to join to another of its kind, it would be possible that another radical of the same structure would join with it. This is true, and on the same principle that two monad simples join.

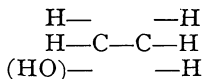
Two monad compounds join in the same manner, resulting in a fully saturated molecule. This is here exhibited :



In introducing another atom of carbon, we enter on new possibilities as interesting as those already studied. Since this molecule is incapable of further saturation, let us open one bond by the dispensing of one of the atoms of hydrogen, and then it will be observed we have a molecule of univalent power, capable of further differentiation. We are no longer confined to the possibilities of the methylic radical, but through the duplication of the carbon we have attained to those of the next higher order—the ethylic.

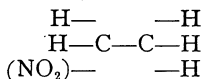
These are called Ethanes. We have now a new radical as our basis for new compounds. Now, in the place of the discarded hydro-

gen, let us introduce the radical HO, as in the case of the chloral; the result is:



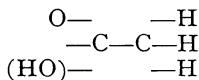
*Ethylic, or common alcohol.*

By substituting the nitric acid radical,  $\text{NO}_2$ , we will have the body which, dissolved in wine, constitutes



*The sweet spirits of niter, or nitrite of ethyl.*

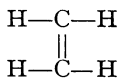
Again let us vary the combining elements. Using the formula for ethylic alcohol, making a further substitution of the two of hydrogen by one of oxide, we satisfy the affinities, and in so doing formulate



*Acetic acid.*

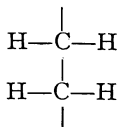
Now let us replace the atom of hydrogen to the exclusion of the HO; then, instead of acetic acid, we will have an anæsthetic aldehyde—one recommended by Prof. Simpson as useful in this direction.

In the marsh gas molecule it is not necessary that the four bonds should be distributed precisely as shown. Another atom of carbon can be added without the increase of other elements, yet there will be no unsatisfied affinities; this is shown in the following:

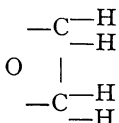


*Olefient gas,*

the chief constituent of illuminating gas. Under certain conditions, however, these bonds which close the carbons may be disbursed and two of them left free, thus:

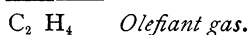
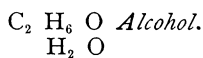


which will constitute a diatomic radical for other complete molecules as for instance:



*Lactic Acid.*

Olefiant gas is the principal constituent of common alcohol, plus water:



We present these formulæ to exhibit the common relationship which exists, and to show how simple is the scheme which chemical science has formulated to the more complete understanding of the apparently complex phenomena pervading this department of our studies.

(Concluded in August number.)

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*For Capping Pulps.*—Dr. E. S. Chisholm, of Tuscaloosa, Ala., has used creosote with oxide of zinc, first proposed by Dr. King in the Tennessee Dental Association. With these he uses oil of cloves. He has had thousands of cases, and is satisfied that there are many where the pulps have been living for ten years under that treatment. We should be conservative and eclectic with reference to the treatment of roots. There are instances where, when the pulp has been lost through devitalization or disease, quick treatment is the thing. The great point is correct diagnosis of the trouble we are dealing with, for there are other cases where slow treatment is beneficial. It does not matter what the canal is filled with so that it be thoroughly done.

Not long since he cut his hand, and applied to it spirit of turpentine. The cut healed so kindly that he determined to test the efficacy of the remedy when applied to a bleeding pulp. The first trial was in the mouth of a young lady. An exposed pulp was cut into, causing it to bleed; the spirit of turpentine was applied with excellent results. Since then he had tried it in two or three other cases, from which he had no complaint. It would not be of benefit where there was supuration, but in the case of fresh wounds it was worth a trial.

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*Rubber, exposed in a hot chamber,* swells and becomes porous; compressed in molds and subjected to heat, its density, after curing, is in proportion to the amount of mechanical pressure employed. When vulcanized in a water or steam-bath, pressure is then essential to density, or hardness.—F. W. SEABURY.

[And this is said by one who professes to be an expert in the manipulation of rubber. When you are vulcanizing a rubber plate which you have *packed* with such care to produce what you suppose the necessary pressure, just put a piece of the sheet on the top of your flask, and see if it "swells and becomes porous." All the pressure necessary in packing the flask is to be sure the rubber reaches all desirable parts. We have too many theorists that speak from theory only.—ED. ITEMS.]

## OUR PROFESSIONAL STANDING.

PROF. G. V. BLACK.

In my observation of men it has appeared that dentists have won for themselves as fair a share of this world's goods, when compared with the capital, knowledge and energy invested in the business, as has fallen to the lot of men in other pursuits. The dentist who is well fitted for practice, and has a fair personal address, rarely fails to make a reasonably good living. Some very well informed men fail, but it is usually to be explained by some mistake in location or equipment, but oftner from errors of personal conduct. Those who attain wealth rapidly are comparatively few in any profession, and dentistry is no exception to the general rule. Yet there are examples enough to show that the dentist may accumulate wealth with considerable rapidity; but, at the same time, it must be conceded that dentistry is not the profession for a man to choose whose principal desire is to obtain great wealth quickly. Those who enter this profession with the desire to attain great fame, may as well retire at once. But to those who wish to be known as men among men, and attain a good name in society as persons who are doing their full share for the welfare of the race, I would say go directly forward with the course you have chosen. We want you with us, and can promise that you will find ample room for development. Your opportunities for good will enlarge as you progress in your professional work, and an appreciative public will reward you. While dentistry requires, of those who do their duty in its practice, much hard and patient toil, and much that is at times discouraging, it has pleasant features. The dental practitioner, if he manages his time wisely, may have as many hours for undisturbed relaxation or for literary pursuits as the devotee of any other profession. It is rapidly becoming the custom of the members of this profession to establish their hours for office work, and have some time that they can call their own, in which they can go forward with such studies as may be desirable and pleasant, each one following his taste. Or the dentist can devote, if properly and temperately done, much time to the pleasures of society, cultivating friendships, giving and receiving visits. If his tastes incline him in that direction, he can give much attention to the study of science, art and literature. Let me say also that directly in the line of his profession there is yet a rich field open to exploration and discovery. The dentist, or indeed any other medical man, be he general practitioner or specialist, need not wait for fields of research for many generations to come. No field of research has been more enriched than ours during the present century, and the prospect for finding other and still more brilliant treasures in the years to come is brighter than ever before. It is entirely unnecessary that I point toward special fields that are now in sight. A sufficient number of them will

be found in the path of the earnest student. His time may be well spent in legitimate lines of investigation that will give a rich reward to his diligence and perseverance.

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*The discriminating operator*—said Dr. Taft, of Cincinnati, in the Southern Dental Convention—will note closely the peculiarities of the dentine he is operating on in the treatment of dead teeth. The tooth of childhood and youth contains a far greater proportion of organic material than in later life, and hence, if this is decomposed in early life, there is much greater liability to trouble—that is, in the nature of pericemental disturbance—than if occurring later. We find that in adult life the teeth of some are much denser than those of others. This depends on the organization, the degree of calcification, and the relative amount of organic material in the teeth. If a tooth is very firm and dense, we can take far more liberties with it than with one less perfectly organized. In teeth of the former class we may proceed at once with operations not admissible in the latter. In some instances, it is impossible to obtain success any way. We find some teeth which after devitalization remain for years apparently in as good condition as they were before devitalization; but others, specially the softer kinds and those of young persons, soon become discolored, because of the rapid decomposition of the animal matters in them. Sometimes this takes place without discomfort to the patient, and again in others very slight irritants may set up serious troubles. We must discriminate, and must not talk of the teeth as all alike. Then, again, the differences of health influences must be considered. Sometimes the teeth are just on the verge of serious troubles, and are easily toppled over by unwise treatment, and the differences of this nature can only be recognized by histological study of the differences in teeth. All these things it is well for us to consider. The electric lamp is invaluable in enabling us to decide at once as to the nature of many troubles in the teeth. Some say cut away a great deal of the tooth-substance; others, as little as possible; but this must be determined by the character of the teeth.—*Cosmos*.

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*Have you infirmities?* Suppress them. *Have you troubles?* Hide them. *Have you losses?* Bury them. But, if you have the crimson glow of health, paint it on your cheeks; if you are thrilled with the ecstasy of joy, print it on your smiles, and if you are blessed with an overflowing measure of prosperity, shower its benefits, as golden sunbeams, on the needy about you. So shall dark shadows be driven from your sky, soft zephyrs shall sing syren songs, and bright angels shall be attracted to your pathway.



## ASSIMILATION.

DR. W. D. KEMPTON, CINCINNATI.

What is assimilation? It may be defined as that process which turns grass into hair when eaten by cattle, and into wool when eaten by sheep. It is to the body what the workmen are to the building. It matters not how much of the finest Italian marble, how much thoroughly seasoned ebony, rosewood, mahogany or other fine woods, how much iron, stone, lime, and other things necessary to the construction of a building are carted and dumped on a building site if the workmen are idle or on a strike, or are unskilled, for the building will surely be unsightly and liable to perish when the storms beat and the winds blow.

The most important influence toward assimilation is sunlight. We of this enlightened century, who think more progress has been made in it than in all the time preceding, are wont to look down with pity and contempt on the ancients, who bowed down in reverence and worshipped the glorious orb of day. But it is evident they recognized in the sun the source of all good, perceiving that only bats, lizards, and such kindred vermin flourished in darkness. We, on the other hand in spite of our boasted intelligence, build our houses with little reference to light, and the windows too small by half are obscured by stained glass, lace curtains, or still worse by those rag-carpets resembling portieries; the rays of the sun are regarded with prejudice as causing the carpets to fade. People who would never think of trying to cultivate plants under such unfavorable circumstances, keep their children there and then wonder they are anæmic, pale and sickly.

Another thing influencing assimilation is pure air, air that is not mixed with the filthy gutters, fermenting garbage piles, sewer gas, or the products of combustion that escapes from the illy fitted joints in stoves or stovepipes, or the exhalations from the lungs in crowded compartments, in other words good hygienic surroundings.

Still another influence is exercise, which is illustrated by the oft cited example of the blacksmith's arm. Exercise that calls into play a variety of muscles, and creates a demand for nutritious food, which, after being digested and assimilated is seized with avidity by the various tissues, and incorporated into their substance. To be of benefit, exercise should be pleasure.

It is, however, when these three conditions—sunlight, fresh air, and exercise—are combined, that we get the greatest good from either, as one can readily see by passing through our markets and observing the translucency and ruddiness of the complexions of the market men and women, and the sallow, worn and jaded appearance of those who work in factories with a lack of pure air and sunlight.

These conditions favor the production of good tooth structure because they favor improvement in all the tissues, but the use of the teeth must also be taken into consideration. The use of an organ promotes growth, its disuse results in atrophy; so that the mania for chewing gum that is so prevalent among children, should be encouraged instead of tabooed.

In reviewing unfavorable influences, we find first, heredity, over which, however, we have no control, and so pass to the consideration of the next which is the drain of nerve force, due to a premature stimulation of the mental faculties, as seen in children who have been sent to school too soon, in whom the nerve force that should go to the development of the muscular and osseous systems is diverted to the cerebrum, leaving the muscles and the bones to get along the best they can, the result being a developed brain mounted on an impoverished body, that is supported by pipe-stem legs. The teeth are like chalk, and the muscles almost imperceptible. When such a being enters the race of life and competes in the struggle for existence, it soon succumbs.

We come to the conclusion that, in order to improve the structure of the teeth, and maintain good health, we must begin at the beginning, and endeavor to improve the general condition. The infant should be taken out airing every day (unless the temperature is in the neighborhood of zero) to get the full benefit of air and sunshine, and from the time it is old enough to walk, should be allowed to play out doors as much as possible. The windows of sleeping apartments should be opened for a time every day.

Furthermore, children should not be sent to school too soon, probably not till they are eight, and surely not till they are seven years old, then the muscular and osseous systems are so far advanced that they can keep pace with the cerebrum. Again, let them chew all the wax they want to, and give them food that will exercise their molars.

This is what ought to be done, but unfortunately too many of the laity regard us as mere members of the masticating machinery, and pay little attention to our words, and seem to think the cobbler should stick to his last. Still there are some who pay attention to us, and profit by our precepts, therefore we should keep on doing our part in promulgating knowledge.—*Ohio State Journal*.

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*The reason some dentists* who are at first ignorant, clumsy and uncultured, finally pass men of genius, is that their very defects necessitate that persistent study, industry and carefulness which bring the highest type of a workman.

## DENTISTS AS MISSIONARIES.

DR. J. B. RICH, NEW YORK.

The subject of this paper is one that has occupied my most earnest attention for the whole of my professional life. Over and over again, I have endeavored, by every means in my power, to impress on the minds of dentists the fact that it was their business to see that the children that were to be born had good sets of teeth. The means of ascertaining how those sets of teeth could be made good is very simple, and have many times been stated. I have myself stated them many times, and written treatises on the subject, and given facts to prove that there is no necessity for the existence of delicate teeth, provided proper means are used to produce strong ones. I have contended, over and over again, that it is the business of every dentist to turn himself into a missionary for the purpose of obtaining good, strong sets of teeth. Now, we can only achieve an object of such great importance by going to the place where this child was formed, because delicate teeth are entirely the result of the condition of the mother's health while she is bearing that child, and her condition before she became pregnant. Take the wild tribes of men, the members of the lower orders of society, and the hard-working peasants, and you will find these classes, in almost every country, have fine, strong, splendid teeth. Why? It is simply because the mother takes a large amount of physical exercise, and uses every means in her power to produce the highest condition of physical health. Often this exercise is forced on her by her master, the man; but there are conditions of society in some parts of the world where it becomes a pleasure for women to achieve a high condition of health, and there the teeth of the people are the most perfect of any found among civilized races. Experiments have been made under the auspices of the French government which proved conclusively that by increasing the health of the mother during pregnancy a marked effect is produced on the teeth of the child. Fine teeth depend on fine health in the mother, and the mother must take every means in her power to produce a high condition of her health, so that all the secretions shall be in the most perfect condition possible. The means of producing a high condition of health are not unknown. The benefit of vigorous exercise, proper diet, and other means of promoting a high condition of health, are well known. Yet, how few mothers of our generation practice anything of the kind! Look at the mothers in any highly civilized community, and what are they? Are they fine animals, such as we would breed fine race-horses from? Not a bit of it. They are delicate in frame, poorly developed, with soft muscles; they faint at every touch, and are neither able to take care of themselves nor their children in any emergency. That condition of the mothers is the cause of delicate teeth. Fine, athletic

strong women do not produce children that have bad teeth. It is one of the duties, and ought to be one of the objects, of dentists to promote the production of good teeth by impressing on women who are to be mothers the importance of attaining and preserving, by the means which are well known, a high condition of health during pregnancy. This is not the first time I have advocated this theory, and called attention to this fact. At one period of my life, and for several years I devoted my whole energies to this subject. I found that mothers who had produced children having delicate teeth, and who subsequently changed their mode of living and pursued a course of exercise and regimen which promoted their health and increased their vital energies, would always thereby produce a marked effect on the teeth of their future children. This result is reasonable and philosophical. If we want fine animals, we breed from a fine animal. Who ever heard of a fine horse being produced by a miserable dam? There may be a scallawag sire, but it is always necessary to have a fine dam in order to produce a fine horse. This principle exists throughout the whole animal kingdom, not excepting man. The formation of teeth is governed by certain physical laws that are well known, and that have been drummed into our minds for ages, and we take no notice of them. The people who take the least notice of them are the dentists. Who ever heard of a dentist telling a woman that her imperfect teeth were the result of a poor physical condition, and that if she desired her children to have good teeth she must take care of her own health, as well as that of her children after their birth and during their early years? Yet, every man who does not instruct his patients is derelict in his duty; the dentist who does not make himself a missionary on that subject is derelict in his duty. In my long experience in the matter of physical training and the improvement of health by a judicious regimen, I have found that there is scarcely a woman, no matter how delicate she may be, provided there is no organic difficulty, but may be made a fine, healthy specimen of humanity. If we would devote our attention to that point with the same earnestness that we do to almost everything else connected with our profession, there would be a marked result produced on the coming generation.—*Cosmos*.

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*Preparing Wax for Base Plates.*—Dr. C. Thomas, of Tioga, Pa., writes us:

“The following is my method of preparing wax for base plates: I melt the wax and pour it into tin pans about one-quarter of an inch in thickness, and take it out when cold and put into warm water until quite soft, and use a clothes wringer and reduce it gradually until it is as thin as I wish to have it, which method, I find, is far superior to using a rolling pin.”

**ANTISEPTICS AND DISINFECTANTS.**

E. J. LILLY, M.D., CIRCLEVILLE, O.

[Written for the Mad River Valley Dental Society]

By an antiseptic we understand a substance which has the power of preventing decomposition in dead animal or vegetable matter. A certain degree of warmth, moisture and air are necessary to putrefactive changes, which consist essentially in the breaking up of the complex organic compounds, and the formation of new and simpler combinations. During the process various gases are evolved, and lower forms of animal and vegetable life are observed to grow and multiply in the decomposing mass. Putrefaction may be prevented by removing the conditions under which it takes place. If, after subjecting the substance to a degree of heat, air be excluded, the dead matter can be preserved indefinitely. Extreme cold will accomplish the same result, though in a different way. Numerous chemical substances have the power of preventing decomposition, while others have a deodorizing property, acting by oxidizing, deoxidizing, or otherwise changing the chemical constitution of the substances. They are, by virtue of these properties, disinfectants.

A disinfectant proper arrests putrefaction by destroying the cause, and renders the products harmless. There is no connection between the power which prevents decay from setting in and that which stops it when begun, for antiseptics in general have but a slight effect on bacteria. Exceptions are found, of course, in those substances, like corrosive sublimate, that are violent poisons, and which are both antiseptic and disinfectant.

The increased attention bestowed of late years, on sanitary matters has led to the manufacture of numerous materials claiming to be valuable antiseptics and disinfectants. But so many of them having been tried and found wanting, the tendency now is to undervalue and decry the use of nearly all. The failure to obtain satisfactory results is, in many instances, probably due to confounding antiseptics with disinfectants and deodorizers, trying to make one agent do the work of another. For instance, if we wish to purify water, in which is suspended decaying vegetable matter: What agent will best serve the purpose? Shall we use carbolic acid? or corrosive sublimate? The odor of the first would simply mask the former smell by its own, while the second would not even do that. Of course, the mercuric chloride would be death to the animalcules in the water, but citric acid will destroy all of them (except cyclops and those with thick epidermis) in two minutes, and still leave the water fit for use. Evidently, some oxidizing agent, like potassium permanganate, or, better still, hydrogen peroxide, is indicated. Again, we wish to be relieved of some obnoxious odors, of which hydrogen sulphide is the most prominent

and disagreeable, and the question is what agent to use in this case. Would creosote, salicylic acid, sodium chloride, or potassic permanganate answer? Neither of them would be of much value, but plumbic acetate, or some other metallic salt that would decompose and unite with the sulphide, would be the correct remedy. Or, take some putrefying animal matter. Plumbic acetate, to combine with the sulphur compounds, is indicated for one thing. But since, for the purpose of disinfection, it is not only necessary to destroy odors and retard the development of spores, but also needful to kill the micro-organisms, and that, too, in the shortest possible period, therefore, only such agents as are bacteriacides, like mercuric chloride, bromine, etc., can be effectively used in such a case, and are the agents to select.

The study and application of true antiseptics and disinfectants may be regarded as a very important practical question; for the sanitary weal of the individual, of cities, and even of countries, sometimes depends on rational disinfection. But with even our most powerful agents, it is almost impossible, at times, to render innocuous the gases of decomposition, or to accomplish the destruction of those living organisms of simple structure, whose connection with the propagation of disease we have so much reason for believing to exist, yet so tenacious of life, and so minute and unfindable. If we knew always just where to look for them, and, after having found them, what agent to apply to each species, what sized dose is necessary, etc., we could successfully contend against them. As it is, we are in the predicament of the Irishman with his flea: He had his brick ready, but the flea had first to be caught before he could mash him.

Fortunately many of these noxious substances give us warning of their presence through the medium of the olfactory. The sense of smell is excited by gases only, including, of course, under this term the vapors of liquids and solids which have low vapor-tension, and which, in consequence, give off vapors at the ordinary temperature. The difference in odors is caused by the difference in the nature of the vibrations of the gaseous particles, just as the difference in the tone of musical sounds depends on the rate and nature of the vibrations which strike the tympanum. So we cannot properly say we smell a decomposing mass; but it is only the gases evolved during the process; and we are too apt to think the only deleterious products of decomposition are those that offend the nostrils, being satisfied when the odor has been destroyed. This is a mistake. Among the products of putrefaction are some gases, mostly sulphur compounds, of very repulsive odor. This is a fortunate circumstance in one respect, as the odor not only serves to make its presence known, but prompts the individual either to flee from it, or employ ventilation for comfort's sake. But it is not only foul-smelling substances that are harmful, for they may be

deodorized, yet retain their poisonous properties long after the odor is gone. For example, carbon disulphide, a very poisonous liquid, the vapors of which produce intense headache and vertigo, has, usually, a repulsive odor; but it is not difficult to deodorize it without affecting its other properties. Deodorized alcohol is no less a poison than it was before. Then again there are substances, like carbon monoxide, marsh gas, etc., which possess no odor, their presence being made manifest only by the effect produced in inhaling them. Against such substances we have no protection but nature's disinfectant, the atmosphere. Yet, there are agents, which, used intelligently, will bring about excellent results, and it will be found each possesses a definite scope of action. Thus carbolic acid is, in general, the antiseptic for crude masses of matter, salicylic acid for the laboratory, while thymol, hydrogen peroxide, glycerol-borates of sodium and potassium, and listerine are to be used in the office.

There are so many materials claiming recognition as good antiseptics or as disinfectants that to give a list of them would consume too much time; but they all produce their effect by acting as poisons to the infusorial organisms essential to putrefaction. Quinine will prevent decomposition in an organic broth; so will carbolic acid, salicylic acid, borax, alum and iron salts, but they are not disinfectants, though frequently used as such. Carbolic acid, the essential oils, burnt coffee, scorched rags, and the like, all have an odor of their own that only masks the other smell without destroying it.

A very good disinfectant, and one that has become quite prominent, is listerine. Of course, great things are claimed for it, but only time and use can determine its true value. Peroxide of hydrogen is another agent that is extensively used for both its antiseptic and disinfectant properties. It is said to instantly arrest fermentations due to the development of living organisms, and the putrefaction of all materials which do not decompose it. But, as it is so rapidly destroyed by so many substances, its application would seem to be limited. When diluted with water and used in connection with prepared chalk, it is excellent as a dentifrice. A good preparation, combining antiseptic properties with a perfume, to drop into our cuspidors after cleansing, is the following:

Take of—

Eau de cologne.....	8 fl. oz.
Peroxide of hydrogen.....	1 drachm.
Chloral hydrate.....	2 "
Quinine (alkaloid).....	10 grains.
Carbolic acid (pure).....	30 "
Oil of lavender.....	20 drops.

—Mix.

Generally, antiseptics can be used with good effect in many

cases; but the disinfectants—those that can be used with safety—mostly fail to disinfect, so too much reliance should not be placed on them. Suitable precautions must be taken to render their use unnecessary; impure air should never be breathed, nor preventable causes allowed to pollute the air. Decay and decomposition can usually be prevented by antiseptics, if in no other way, for it is much easier to prevent putrefaction from setting in than to check its progress after it has once begun.

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#### GLORYING IN HIS SHAME.

According to an exchange, a correspondent of the *Cleveland Leader* is responsible for the statement that there is an old dentist somewhere "who has pulled 100,000 teeth by actual count." We are glad he is old; for the old must die soon. The correspondent tells us that he is "a dirty-looking fellow." How could he look clean after such dirty work. The old fellow told the correspondent that "the molars I have pulled will fill several bushel baskets, and their bone-dust would make the largest garden rich." With the dust of the incisors, cuspids and bi-cuspids added, he might even retrieve the character of the garden of Gethsemane. He claims to have pulled "the first pearl-like product of the year-old baby," and "the crumbling tusk of the nonegenarian." Herod killed the babies; but there is a wretch who brags of having mutilated them and left them to linger in their misery.

Stand up! You "lean and miserable," hollow, hungry-eyed, dyspeptic, old mutilator,—stand beside, no—in front of this row of humanitarian dentists who have saved hundreds of thousands of the beautiful gems which you boast of destroying! Can you look them in the face? Possibly you can; for probably all sense of shame, all signs of a conscience have long since left you.

Now we shall wash our pen and try a clean subject.—[Editorial in *Ohio State Journal*.]

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*Vaccination* is one of the greatest blessings of civilization. Before its introduction there was annually an average of 3000 deaths from small-pox to every million inhabitants. Since the practice of vaccination has become general, the percentage of deaths from small-pox has fallen nine-tenths. Of course it is not a preventive of other diseases, neither does it produce them. The virus may be so impure as to inoculate the subject with some other malady, but this is very seldom, and is almost always as much the fault of the surgeon as accidentally giving prusic acid for vinegar.

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*Some men* are great talkers but poor workmen, others are poor talkers but good workmen.



## COCAINE.

The following opinions and experiences given in a recent meeting of the New York Odontological Society, as published in the *Cosmos*, are of interest:

DR. J. SMITH DODGE, JR.—One use of cocaine so promptly approves itself, I take the opportunity to suggest it. We frequently have to do a little violence to the borders of the gums, and I have found that by simply giving the gum a bath of the four per cent. solution of cocaine, you can put on the rubber-dam and work it up with ligatures to your heart's content without causing pain. In the same way, trimming the cervical border of approximal fillings, from being, with many patients, one of the most objectionable features of the operation, becomes painless. I can describe one case in which the effect of cocaine was very striking and very satisfactory. It was a lower bicuspid, largely decayed, and having that unpromising look that we are all familiar with. The first touch of the instrument to the debris in the cavity gave severe pain. The rubber-dam was put on, and a drop of cocaine was mixed with the mass that lay in there, and in two or three minutes it was possible to partially cleanse the cavity. Then some more cocaine was applied, and after three or four successive applications of it in that tooth, I was able, with a broad spoon-shaped excavator, to scrape vigorously across the bottom of the cavity, where there was an exposure of the pulp as big as the head of a pin, and which looked thoroughly red. The lady who was an intelligent patient and knew what I was doing, assured me that I had given her no pain that was worth speaking of. The cavity was subsequently filled in the way I usually follow, and several weeks have elapsed without my hearing anything from it. I certainly should have heard from it if it had not done well. In this case an operation that usually would be exceedingly painful was made painless, and without the least ill result following. I had another case where there was not quite an exposure of the pulp, but from the character of the patient's teeth, which I have known for a good many years, it is very certain that we should have had a scene if I had not used the cocaine. But, in that case, the operation was pronounced absolutely painless.

DR. J. MORGAN HOWE.—I have twice applied a ten per cent. solution to exposed pulps that had been irritated and were aching very severely, and the result was almost instant relief. In another case a pulpless tooth, with periosteal inflammation of an acute character, was aching severely, when an application of the same solution in the canal of the root was followed by marked amelioration of the pain very soon afterwards.

DR. W. H. ATKINSON—With reference to cocaine, it may be well to state what has been very largely published regarding the experi-

ments with this agent, which is, that it has the peculiarity of having no reaction; it is the one anæsthetic that leaves the system without reaction, so far as known, and it has been used in very large doses, both internally and by subcutaneous injection. I have had it used in my own person, and I know it does not take long to recover from its effects. I have used it in my patients' mouths, where reaction came on so gradually that they did not know the time when its influence left. I do not think we need to be at all deterred from using it vigorously, either the alkaloid itself or any aqueous solution we may make. I have made my own solution. I have not seen much difference in the anæsthetic effect of the ten per cent. solution and other strengths down to two per cent. I think there is a difference in the sensibility of different organisms that makes a great difference in its effect. I have been led to think that it has to be absorbed into the tissues. One case occurred in Chicago, where a boy, eight years of age, by breaking a glass, cut his arm so that the veins and the radial artery were severed. A surgeon seized it, tied it up with a handkerchief, and painted it with cocaine—the four per cent. solution. He then took up and tied the vessels which required ligation, and used torsion on the smaller ones. During the operation the boy kept getting ready to flinch, but did not. When asked why he did not, he said he expected to feel the pain, but did not feel it. I judge from that case that the cocaine is absorbed into the tissues.

DR. W. H. DWINELLE.—I think our knowledge of the coca plant, from which cocaine is derived, before we knew of its anæsthetic properties, would justify us in considering it a harmless remedy. We know that for many years that the leaves of this plant have been an article of export all over the world. I would not undertake to state, without the authority of the figures before me, the extent of the exportation of the leaves, or how many hundreds of thousands or millions of dollars are employed in it; but we do know that the article has been known for a long time—since the early part of the sixteenth century, I think—and regarded almost with superstition, being called by the natives of Peru the “divine plant.” For hundreds of years it has been used freely as an article of peculiarly invigorating effect as a tonic—I had almost said of diet. The natives of Peru, who carry heavy burdens up and down the mountains, are satisfied, if their pockets are filled with coca leaves, to dispense with all other food or diet for days together. Its products have been employed medicinally in the form of extracts, infusions and wines of coca for a long time. If there is anything offensive, or any dangerous quality in the article it certainly would have manifested itself before this time. It is not a caustic like arsenic, whose influence, when applied to a tooth, is progressive till it ultimately destroys its internal vitality, but rather be-

longs to the sedative and temporary order of remedies. Before the anæsthetic effect or property of cocaine was known, it had almost been discovered by others that it had this quality. I forget now the name of the French chemist who first discovered and made an alkaloid of coca; but, in that discovery, he almost hit on the one that Dr. Köller recently made. He found that when cocaine was brought in contact with the tongue, it produced a peculiar numbness, which was a well-defined anæsthetic effect, but soon passed away. So I think we are entirely justified, aside from the lessons derived from the many surgical operations that have been performed recently under its influence, in regarding it as perfectly harmless to the human system. Its anæsthetic effect is invariably temporary. Coca is regarded as a tonic of the most beneficial character, and a substitute for food. I recollect reading of an instance where a person had gone sixty hours without sleep and without any other food than coca leaves. In that case, it was a substitute for sleep as well as for food. Many other similar instances are on record.

DR. W. GEORGE BEERS.—It has been for seven or eight years a common custom with Canadian athletes to chew these leaves, and I myself have traveled on snow-shoes forty or fifty miles, as long ago as five or six years, without fatigue, by frequently chewing these leaves. They have a bitter taste. The effect is stimulating and tonic; it seems to be invigorating, and enables one, who is not a professional athlete, to tramp on snow-shoes twenty or thirty miles without much fatigue.

#### IOWA STATE DENTAL SOCIETY.

The twenty-third annual meeting of the Iowa State Dental Society was held in Des Moines, May 5th, continuing four days. The attendance was the largest the society ever had. The papers, discussions and clinics were very interesting and instructive. The membership was increased by twenty-seven. The society will publish its transactions in full in pamphlet form.

The officers elected were: President, A. Morsman, Iowa City; Vice-President, R. L. Cochran, Burlington; Secretary, J. B. Monfort, Fairfield; Treasurer, J. Skulp, Muscatine. Society adjourned to meet in Iowa City, the first Tuesday of May, 1886.

J. B. MONFORT, *Secretary*.

*Cocaine* still attracts attention. Of course there were all sorts of reports concerning it, as with all new things. It, no doubt, has its place, and in that place will be found useful. It is not surprising that many experimentors fail, for we are all working in the dark. It is still work. The results of all will give data that could not be obtained by a few. No dentist should be contented to remain in ignorance of its practical effects; and this can only be had by personal use.

## DIET AND THE TEETH.

DR. W. D. KEMPTON, CINCINNATI.

Among all the heated discussions in regard to stopping ravages of dental caries, the best material to do it with, and the best method of manipulating, we occasionally find some one who, "like the voice of one crying in the wilderness," calls our attention to the poor texture of many of the teeth we meet with, and questions whether it is possible to improve it. Others who have taken up this thought and investigated it, tell us the trouble is a deficiency of phosphates in the enamel and dentine, probably due to a lack of these principles in the food and as beans, oatmeal, cracked wheat, rice, and graham flour are rich, in these salts, consequently all that is necessary to build a perfect set of teeth is that the mother during pregnancy and lactation, and the child after being weaned, should partake of a diet composed largely of beans, oatmeal, cracked wheat, rice, or graham flour, *a la* Dio Lewis.

We have all seen children whose deciduous molars have been swept away by caries before the eruption of the first permanent molars, whose incisors were soft and carious, whose muscles were flabby and mushy, and perhaps we have advised a diet of beans, oatmeal, cracked wheat, rice and graham flour, and have been told that such a diet had been attempted but the children rebelled against it. Perhaps we have tried such a diet on ourselves, only to return to the flesh pots of Egypt, concluding that the only reason the "Heathen Chinese" flourishes on such a diet is because he *is* a heathen.

If, however, we investigate the method of preparing these cereals for the table, we are struck at once with the astonishing stupidity of the average cook, and realize the truth of the saying: "The good Lord gave us the food but the devil gave us the cooks." We find that the rice, oatmeal or cracked wheat, are put up in a stew pan with an excess of water, placed on a hot stove and stirred every few minutes to keep from sticking to the vessel. The result is a pasty mess that is apt to be scorched, and unpalatable. If instead of this method the cereal was allowed to soak in a sufficient quantity of water till it had absorbed as much as it could, was then put in a tin vessel with a little water, and such a seasoning as was deemed proper, placed in a water bath, and cooked a certain number of minutes, the children would not only not rebel against it, but would love it, for the natural flavor has been retained, and the grains are whole instead of being in that disgustingly pasty condition usually seen. But we sometimes meet with persons in whose mouth, judging from their diet, we should expect to see teeth of adamant, but find instead the poorest kind. This compels us to seek some other cause than bad food, and leads us to the conclusion that defective assimilation should bear part of the blame.—*Ohio Journal*.

## OBITUARY.

J. G. AMBLER, M.D., M.D.S.

Died suddenly, of pneumonia, at his residence in Dobb's Ferry, New York, on the evening of April 6th, J. G. Ambler, M.D., M.D.S., in the sixty-ninth year of his age.

John Gardner Ambler was born in South New Berlin, Chenango County, New York, September 2, 1816. In the winter of 1832 he entered Rennselaer Polytechnic Institute, Troy, N. Y., and afterward studied medicine in Waterford, Saratoga County. He was a student of dentistry in the office of his uncle, Dr. D. C. Ambler, in New York city. He commenced practice in that city in 1842, and in a few years became one of the leading dentists, practicing there till the day of his death.

Dr. Ambler always took an active interest in dental societies. He was one of the original members of the "Society of Dental Surgeons of the city of New York." He was a member of the American Dental Association, and took a special interest in the American Dental Convention, having several times been elected president of that body, and by his energy prolonged its years of usefulness. In 1855 he edited and published the "Dental Monitor," a popular journal; and was probably the first dentist to issue, in pamphlet form, popular instruction on the care of the teeth, under the title of "Inquiries Answered"; a somewhat similar work to "The Teeth," published for the profession by the White Company. During his professional career he contributed frequently to the literature of the profession.

In 1852 Ambler & Avery exhibited at the World's Fair in London, the largest, the most finely finished and the most beautiful collection of artificial dentures in metal ever manufactured; for which they received a gold medal. These specimens were also awarded the gold medal at the World's Fair in New York city in 1853, and also from the American Institute. It was customary, and considered proper at that day, for dentists to exhibit their handiwork at the fairs.

Dr. Ambler was a communicant of the Protestant Episcopal Church, for eighteen years being vestryman and warden of Christ Church, New York. His last literary effort was an eulogy upon the life and services of the late Rev. Geo. B. Reese, of Dobb's Ferry, N. Y., delivered before the congregation of Zion P. E. Church, of that place, on the evening of March 25th.

A. T.

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*Nainsook.* In giving the size of pieces of this unstarched muslin we have been in the habit of using to dry teeth-cavities with, we said they were three by four inches. We should have said four by six inches.

## DEFECTIVE ENAMEL AND SYPHILITIC AND OTHER DIATHESES.

DR HENRY SEWILL, ENGLAND.

Hereditary syphilis, which seems to interfere with the development of all the structures derived from the epiblast, leads in many cases, and I believe in most cases, to imperfect formation of the tooth tissues. The amount of injury to the developing teeth depends on the stage of the disease in the affected parent. It is, of course, most common for the father to be the subject of the disease. A woman pregnant by a man suffering from secondary syphilis of recent date, will usually either abort in the earlier months or bring forth a dead child about the full term. As the virulence of the disease in the parent abates under treatment or by lapse of time, the mother begins to bring forth living children; these may perish early or may survive in accordance with the extent to which their constitutions are modified by the syphilitic poison. It is a fact that only secondary syphilis is transmissible, and thus so soon as that stage in the parent is passed, children, although often unhealthy, will not display signs of specific hereditary taint. In my experience the typical syphilitic tooth described by Mr. Hutchinson (and which must not be confounded with the merely honey-combed tooth), occurs only in children displaying the worst form of hereditary syphilis; but it by no means forms an invariable accompaniment to this condition. Indeed, I have been struck with the rareness of the malformation in children with unequivocal signs of syphilis. I reckon roughly, I have not seen it in more than one per cent. of cases. I should be glad to know if similar experience is common.

I have observed that in every child begotten of syphilitic parents, and even in those cases where no specific symptoms existed, the teeth, although often good in form and color, have been of imperfect formation, the enamel soft and easily broken. I have noticed, also, that the children's teeth were, as a rule, quite inferior to those of the parents; and I am strongly of opinion that children begotten of syphilitic progenitors may often display inherently defective dental tissues as the sole sign of the attenuated taint by which they have been affected. It is not for the dentist—perhaps not for the surgeon—to suggest to a father that his child is syphilitic; but the fact is often known to one or both parents, particularly when the first-born, as often occurs, are chronic invalids from the disease, and the later born children healthy. By one means or other, I have been able to verify my observations in a large number of cases; and the point on which I wish to lay stress is, that seeing how commonly syphilis is diffused through all classes of the population, and considering that children of the third and fourth generations would inherit the dental characteristics of their parents, hereditary syphilis may be reasonably looked on

one of the main causes of imperfect development of the dental tissues.

An intimate connection between dental mal-development and any other diathesis, besides the syphilitic, cannot be fully demonstrated; yet there are some of these constitutional conditions with which badly made teeth seem variably associated. In this I am recording the results of my own observation. My experience goes to show that imperfect dental tissues are found in the majority of cases of scrofula. Phthisis is now known by no means to indicate invariably the tuberculous diathesis. Keeping the distinction in view, I would say that ill-made teeth are not at all a constant accompaniment of any form of phthisis, nor are they specially noticeable in a majority of cases in patients of undoubted tubercular tendency. There is one class of patients, however, the subject of phthisis of undoubted tubercular origin, which almost invariably presents faulty dental tissues. This is the type most frequently found in females, in which there is often, with a fragile form, considerable facial beauty, in which the eyes are large and expressive, the complexion fair with blue veins visible beneath the skin. This is the common type, which, without further description, will be recognized, and in which I have found the teeth, though well-shaped and often uncommonly white and beautiful to look at, covered with the softest and most defective enamel. With rickets I have generally found inherently defective teeth. I can in no way associate faulty tooth development either with the rheumatic or gouty constitution. Indeed, with the latter, both teeth and jaws are often of unusually massive and solid character.

In view of our limited knowledge of the causation of dental degeneracy, what general measures can be suggested likely to lead to improvement and to aid in the prevention of dental caries? We, with other reformers, can direct attention to the need of national sanitation in the broadest sense. Syphilis, that fruitful source of moral and physical misery, is an affair mainly of police, and will—with many other diseases—surely be extinguished when the people are sufficiently educated in science, and able to estimate at its true worth the sentimental false humanitarianism which now dominates a loud and active portion of the community. Scrofula and rickets are mainly poor children's diseases, and are the direct products of filth, darkness and starvation. Of the etiology of tuberculosis little is known, although this disease seems in some measure the outcome of climatic influences—of cold and damp. The observance of the well-known general laws of health, we may be sure, will tend to produce good teeth in the race, if not in the individual, and among these laws we must insert one inculcating the use of articles of diet that shall give proper exercise to the muscles of mastication and prevent them, and the bones to which they are attached, from wasting.

The question of the marriage of syphilitic patients is one the dentist has not, happily, to decide, but we may remind the sanitarian that bad teeth will probably be included among the physical evils from which syphilitic offspring must suffer. The wealthier classes do not, as a rule, marry recklessly after syphilis, but it is doubtful if even enlightened people are sufficiently deterred by the presence of any other constitutional taint transmissible by heredity.

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### HURRY AND WORRY.

It is not "overwork," but worry, that kills. Our men of brain might do a great deal more than they do, if only they were less feverish in their haste, less harrassed by worry, and less wasteful of energy. We are all in too much of a hurry in what we do. We have too many irons in the fire, too much business on hand, and are far too energetic in our endeavors. With deliberation, calmness, and much reserve of strength as results from perfect restraint, a man may do an infinity of work without trouble.

The system of breathless haste and eager anxiety is rapidly undermining the human constitution. We are impatient for results. Statesmen and politicians are kept on the strain of sustained attention, and their brains are for many hours of the twenty-four in a state of ferment. The brains of speculators on the Stock Exchange, and even the brains of merchants in their private rooms, are equally taxed in the same way. All classes of the community share the turmoil. The period is one of brainworking impetuosity; of hurry, worry and waste—the waste of cerebral energy and nerve force. The higher nerve-centers are kept incessantly at work, and become, as it were, overheated, so that it is impossible they should quiet or cool down in the brief period allotted to repose. Too often they do not rest even in sleep. The brain only dozes instead of sleeping, and as a result there are dreams of the recent day's work—that infallible symptom of impending mischief. The only marvel is that, looking to the utterly unphysiological character of our mental and nervous habits of work, the number of sudden failures is not greater than they are, and that we have not a larger percentage of brain mortality to deplore.—*London Lancet*.

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*Cocaine*.—I have been using cocaine for some time in preparing cavities and extracting, and have had good success.

Dr. Pettibone, of this place, painlessly extracted a large tumor from the lip of a patient after I had hypodermically injected the ten-per-cent. aqueous solution.

CROWN POINT, Ind.

S. M. MARKLE.



## WHAT MAY BE EXPECTED OF ARTIFICIAL TEETH.

DR. L. P. HASKELL, CHICAGO.

Says Mrs. A: "There is Mrs. B. has a set of teeth that she can do anything with, and she never has the least trouble with them; why can't I do the same with mine?"

Simply because you have not Mrs. B's mouth! There is just as much difference in the shape and condition of mouths as in the face. There is a flat and a deep palate, the hard and the soft palate, the broad and the narrow ridge. The relative position of the two jaws has much to do with the usefulness of artificial teeth.

Lower sets are more troublesome than upper, and the mucous membrane of the lower jaw is apt to be more sensitive, specially when the ridge is very thin, or where it has nearly disappeared from undue absorption of the bone. In such cases changes are necessary in the plate from time to time, till the gums adapt themselves to the plate in a measure.

In partial sets, plates with only *front* teeth, are always more difficult to use than those with side teeth, unless in case clasps are worn.

It is never necessary for the patient to suffer pain from the wearing of a plate; it can and should be relieved.

The faulty antagonism of the upper and lower teeth are as often the cause of trouble as a misfit.

But always bear in mind it does not follow because your neighbor's teeth are a complete success in all respects, yours must necessarily be equally so. In your case more time and patience may be required to become accustomed to them.

Where the patients say "they forgot they have artificial teeth," they are the exceptions to the general rule.

There are no cases, however, where a set of artificial teeth may not be worn with comfort and a good degree of usefulness.

*To obtain a correct articulation* for an upper plate, have the patient press the base plate against the roof of the mouth with his tongue, and hold it there while closing the mouth. Asbestos felt, such as is used as a foundation for fillings, is a good absorbent—rumpled and rolled into pellets is useful for drying cavities, applying creosote, etc., and makes a good packing for spaces between sections of teeth before vulcanizing. Use the cloth that separates sheets of rubber, cut into strips crossway, for smoothing approximal amalgam fillings.

T. J. H.

*Wax for base plates.* Dr. T. R. Woodard's plan of forming the sheets, is to pour into shallow pans three or four tablespoonfuls, and when it is cooled, warm the bottom of the pan and remove it by running under it the thin knife blade.

## NATIONAL ASSOCIATION OF DENTAL EXAMINERS.

The third regular meeting of the National Association of Dental Examiners was held in Tulane Hall, New Orleans, on Tuesday, March 31, 1885. The following resolutions were passed :

*Resolved*, That this association recommends to all State boards of examiners that registration should be made with the examining boards and the clerks of the county courts.

*Resolved*, That this association thinks that all examinations of candidates by State boards should be conducted principally in writing, and that a record of such examinations should be kept by the secretaries of the boards.

*Resolved*, That, in the opinion of this association, a diploma from a reputable dental college should be considered as the only evidence of qualification for those who seek in the future to enter the dental profession, and that we recommend to all State boards to secure, at the earliest practicable moment, the amendment of existing laws, so as to attain this end.

*Resolved*, That the appropriation, by any person, of any title or appellation to which he is not justly entitled, and by which deception and fraud may be practised, is, in the opinion of this association, highly reprehensible, and should be prohibited by legal enactment.

*Resolved*, That this association deems it undesirable that State examining boards should be composed of gentleman serving as professors in dental colleges, and recommends to the appointing powers of all States that, so far as may be possible, the places of such professors, when their terms of office expire, be filled by those not holding such positions.

The association adjourned to meet in Minneapolis on the first Tuesday in August, 1885.

GEO. H. CUSHING, *Secretary*.

*The first commencement* of the Medical and Dental Departments of the National University, Washington, D. C., took place Friday evening, May 22, at the Congregational Church, and was by far the most brilliant commencement held here this year. The church was beautifully decorated for the occasion, and the vast stage, with pyramids of botanical plants, and numerous floral designs visible at every turn, presented a scene long to be remembered. After several selections had been rendered by the United States Marine band, the graduating exercises followed. Address by Judge A. MacArthur, vice-chancellor of the University; awarding of diplomas by Secretary of State Department, Bayard; address to graduating classes, Prof. J. S. Winter; valedictory by Edwin Howard. The following are the names of the graduates: degree M. D.—G. W. Grinder, Maryland; degree D. D. S.—Edwin Howard, District of Columbia, C. M. Kennedy, District of Columbia, L. A. Brown, West Virginia, and G. W. Egleston, New York. The classes of next year are quite large. This institution promises to be the finest in the country.

DEATH OF DR. L. A. MEREDITH.

TOPEKA, KANSAS, May 8th, 1885.

ITEMS OF INTEREST, PHILADELPHIA, PA.

The following resolutions were adopted at the Fourteenth Annual Meeting of the Kansas State Dental Association, which convened at Topeka, May 5th.

*Whereas*, Since the last meeting of the Kansas State Dental Association, the All-wise Author of our being has removed by death our highly esteemed friend and fellow laborer, Dr. L. P. Meredith; therefore

*Resolved*, That we desire to give expression to our sincere regret that one so valuable to the Dental Profession as an author, as a cultivated gentleman and of high professional attainments should be lost to the cause of dental progress in the world.

*Resolved*, That we will profit by his counsels which were always so ably given.

*Resolved*, That a copy of these resolutions be spread upon a memorial page in the Association records, a copy furnished to the family of the deceased and to the Dental Journals.

*Resolved*, That we extend to his sorrowing family our sincere sympathy in their deep affliction.

J. D. PATTERSON,  
R. I. PEARSON,  
A. N. THOMPSON,  
*Committee.*

C. B. REED, *Secretary.*

*The third annual commencement exercises* of the Chicago College of Dental Surgery took place at Hershey Music Hall, Chicago, Ill., on Friday evening, March 27, 1885, at 7:30 o'clock.

The address to the graduates was delivered by Prof. W. T. Belfield, M.D.; the valedictory by J. E. Hinkins, D.D.S.

The number of matriculates for the course of 1884-5 was sixty-two.

The degree of D.D.S. was conferred on the following members of the senior class by Dr. J. A. Swasey, President of the Board of Directors: H. Austin Armitage, M.D., England; Harry Leon Barnum, M.D., Wisconsin; Edward Everett Cady, Ill.; Warren Cary, M.D. Ill.; Jesse Austin Dunn, Ill.; Astor Gerard Gray, Ill.; Rudolph Theodore Hasselüs, Denmark; Joseph Hickey, Dakota Territory; John Edward Hinkins, Illinois; A. Melville Hudson, Canada; Charles Nelson Johnson, L.D.S., Ontario; William J. Johnson, MD., Ill.; Edmund Lambert, Ill.; Asa Holt Lane, Ill.; Charles William Lewis, Ill.; Archibald Stuart McCandless, Ill.; Joseph Donahey Moody, Ill.; Amos Jedd Nichols, Ill.; Charles Putman Pruyn, Ill.; Joseph J. Reed, Ill.; Charles Henry Wachter, Maryland; George W. Whitefield, Illinois.

The honorary degree of D.D.S. was conferred upon Dr. E. B. Call, of Peoria, Illinois. TRUMAN W. BROPHY, *Secretary.*

## MEDICATED WAFERS.

A. H. BEST, M.D., L.D.S.

At the meeting of the Georgia State Dental Society in May, 1884, I submitted to the consideration of those present what I then termed the "medicated wafers," for the treatment of pericementitis, neuralgia, or ulcerative inflammation arising from periosteal or pulp inflammation of teeth. I also stated that I had found them valuable in relieving the soreness consequent on wedging, and in all cases where the fatigue of the parts from lengthy operations, together with the irritation of polishing, filing, etc., had left a sensation so nearly akin to actual pain, as to render some treatment, either real or apparent, an absolute necessity with nervous patients, and extremely desirable even for the minority not included under that head.

The want of some such kind of treatment first became manifest to my mind in 1882 and 1883, when I was particularly annoyed by the excitability of some of my patients. They generally found me occupied at the chair when they called; ignored, or did not comprehend my repeated assurance that the soreness complained of was merely the result of wedging, filing, or polishing, and that it would pass off in a day or two; and persistently urged that something be done; so that I found it necessary to employ some means of affording mental satisfaction, at least, till nature could repair the breach. I therefore directed a neighboring druggist to prepare for me a few pads of blotting-paper saturated with tincture of capsicum, extract of ginger, morphia, oil of mustard, and menthol; the tincture being first evaporated down to half volume on a water-bath, and the other constituents then added.

The blotting-paper was prepared by simply dipping it in the solution, allowing it to dry, and dipping it once more, till it was considered well charged. When the paper had sufficiently dried after the last dipping, one side of it was coated with two or three coats of shellac varnish; it was then cut into squares—the "wafers"—and was ready for use.

For convenience the wafers were put up in small paper boxes, a dozen in each. Patients complaining of soreness, whether incidental or consequent on an operation, were given a box, with instructions to place a wafer over the seat of pain, with the dark side next the cheek, and permit it to remain two hours, renewing the application, if necessary, till relieved. One or two usually had the desired effect.

These wafers are so easily made, so universal in their applicability and, above all, so effective as a local stimulant and anodyne, to say nothing of the mental effect produced, that they become valuable.

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*Genius is often* but another word for persevering industry.

## CONTINUOUS GUM WORK.

AMBLER TEES, D.D.S., PHILADELPHIA.

[The Lilliput Furnace.]

Allen's Continuous Gum Work was introduced about the year 1851, by Dr. John Allen of New York. It is considered the purest and most life-like of all artificial dentures. It is composed of materials of high conducting properties, so that after being in the mouth a few minutes, it absorbs the heat and transmits it into the oral cavity, thus preventing those inflammatory conditions of the mucous membrane caused by the non-conducting vegetable bases.

It is made of a swaged *platina* plate—a metal which is as soft and as pure in the mouth as pure gold—with plain teeth soldered to it, made for the purpose by tooth manufacturers. A mineral compound called *body*, in a moist state, is applied round the necks of the teeth, and on the lingual portion of the plate and, with small spatulas, carved to imitate the contour of the gums. After being fused in the furnace, a thin coat of gum enamel is spread on, and fused also, making a beautiful imitation of the natural gums. The composition of the *body* is feldspar and kaolin, with a flux composed of silex, glass of borax and sal tartar. The composition of the gum enamel is feldspar and flux, colored with a frit, made of the *purple of Cassius*, an oxide of equal parts of gold and tin.

After the failure to work successfully the Fletcher gas furnace for continuous gum work in America, I conceived the idea of obtaining the requisite amount of heat in a small furnace, by using for fuel, gas and coke combined, but after experimenting, I found that sufficient heat could be obtained in a very small furnace, from coke alone, by having it screened to a uniform size. The result was the "Lilliput" Furnace.

The size is fifteen inches high, twelve inches wide, and eight inches deep. It is made of fire-clay in three sections, hoop-bound, of light weight, but strong in contrast with the heavy sheet-iron bound large furnaces. The fire can be made in a few minutes, the heat coming up quickly, noiselessly, and with certainty, and will fuse continuous gum body in thirty-five minutes after the fire is kindled, when the draft is very strong and the winds high, as within an hour at other times.

I also conceived the idea of furnishing this handy little furnace to the profession with all the appurtenances necessary to successfully operate it, together with a book of instruction to mount this beautiful denture, so explicit, that a dentist would be able to master the details without personal instruction. Five years have passed since, and now dentists in all parts of the civilized world, who otherwise would have known but little about it, are engaged in the manipulation of continuous gum work. For illustration and prices, see advertisement.

## EXTIRPATION OF THE DENTAL PULP.

A. H. BEST, M.D., L.D.S.I.

The condition known as "Exposed nerve," may be justly considered not only a most interesting but often a very disappointing subject to be dealt with in dental conservation. The various difficulties which beset one in his endeavors to do the best for each case presented, arise as much from the divers expressions regarding modes of treatment and results attending them, as from the constitutional peculiarities or idiosyncrasy of the patient, and local influences which have special bearing on the pathology of the subject. I mention the latter not as a fact of personal knowledge, but only so far as it relates to the success of certain treatment of exposed pulps. Methods of treatment are frequently proposed, with the assurance that success is invariable, which, after repeated trials in various other localities, have not been attended with results as satisfactory as were expected from the laudatory manner in which the method was presented. In explanation of this I can, to draw it as mildly as possible, only assume—if such treatment as I have often seen suggested for exposed pulps is really successful—that it is confined to certain localities, or else that success with some practitioners is not what others would wish the term to express.

Now, I am not going to discuss the various methods of treating exposed pulps, or dilate on the merits or demerits of any of them. It is fair to assume that nearly every dental practitioner knows best how to treat such pathological conditions. But all conservative methods involving devitalization are dependant on the removal of the pulp; and it appears to me that any improvement in the manner of removal will be very welcome to the profession.

Theoretically, the removal of the pulp is not a difficult operation. You treat it to a dose of arsenious acid and morphia, and, when devitalized, you pass a delicate little nerve-broach into the lifeless pulp, give it a gentle twist, and, behold! the entire contents of the chamber comes forth. I say, you do this with perfect ease; but, alas! you can only do it that way on paper.

In practice the account reads somewhat differently. A patient exhibits a tooth, aching from exposed nerve. You remove all foreign substances and as much of the dead tooth-structure as the proximity of living tissue will allow; you apply a dressing of nerve-paste, and instruct the patient to call again in twenty-four or forty-eight hours. At the second sitting you open the pulp-chamber and introduce a nerve-broach to remove the contents. The fact must not be lost sight of that, though the pulp may be completely devitalized, it is not separated from the living tissue, unless ulcerative demarcation has set in, which is not likely to exist in recent cases, and not desirable. It is, accordingly, necessary to tear away the devitalized from the living

portion of tissue, which often gives severe pain. The connection between dead and living matter is yet so close, that even simple compression transmits sufficient pain to throw undeserved discredit on the efficacy of the devitalization. What is needed is a prompt division of the devitalized pulp from its yet living and hyper-sensitive connection; and about the most unlikely tool to affect this is the jagged wire—the “nerve-broach.” Let us examine its practical working. Introduce it, give it a twist to fasten the barbs in the tissue, and quickly withdraw it. In nine cases out of ten it saws its way out, leaving the dead pulp simply torn to shreds. “Oh! my! doctor, what intense pain!” says the patient. “It is as bad as having a tooth drawn. Did you get it out?” “No,” says the operator, “let’s try again; I think I’ll get it this time.” And he tries with very probably the same results. Is it not natural that the patient, who does not know that the tool is to blame for the failures, should set down the dentist as a bungler? With long suffering patience and amiability on the subject’s part, and the expense of several broaches by the operator, the dead tissue is finally torn loose, and the pain, of course, subsides—no, not always.

In the hope of ascertaining some effectual method by which this often difficult and always unpleasant duty might be accomplished more satisfactorily, I have carefully tried every practical suggestion; but disappointments and failures counterbalanced the satisfactory cases, till I came to understand that the prime requisite was to sever the devitalized portion from the living pulp as rapidly as possible. In order to penetrate the tortuous nerve-canals as far as might be considered necessary, and subsequently admit of amputating the pulp column by a rotation, a special pattern of instrument was required. Nerve broaches only accidentally accomplished this result, under specially favorable conditions, such as large canals and tolerably straight roots; and these conditions are infrequent.

Of all attenuated substances likely to meet the requirements, none seemed to surpass the advantages offered by exceedingly fine, high-tempered, round steel wire, such as piano strings. I accordingly procured a sample of the proper gage, and made a nerve-extractor, calculated to pass to the apex of the root, or as far as the size of the canal would warrant. Being soldered to the bit of a dental engine, and run at a high rate of speed, it at once decapitates the pulp, so to speak, and I therefore dubbed it the “nerve-guillotine.”

An improvement on this instrument, which soon suggested itself, was the addition of a short spiral at the end to be soldered to the engine-bit, so that the guillotine might be used without inconvenience in any direction. Broken bur shanks were used to solder the wire spiral to. The device thus improved was found to be very efficient and by no means expensive.

The pulp is, of course, to be devitalized as usual, for which purpose the ordinary nerve paste of arsenious acid and morphia, with a little carbolic acid, answers quite well. If it is desired to move the pulp and fill the tooth at one sitting, it would be well to make two applications of this paste with an interval of two hours, and two hours after the second application to proceed to the extraction.

If, however, the usual course is to be pursued, the first dressing may be permitted to remain as long as the operator deems necessary for complete devitalization.

As previously intimated the guillotine is intended to be used in connection with the dental engine, and rapidity of motion constitutes one of the principal features of successful practice.

Those who are familiar with the qualities of piano-string wire will recognize at once the peculiar advantages derived from its tough and exceedingly springy temper. Smaller grades of the same wire are used as strings for the guitar, so that any desired size can be obtained without difficulty.

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#### WHO CAN BEAT THIS FOR A BIG MOUTH?

Recently I took an upper impression of a ladies' mouth that measured two-and-a-half inches across, and from the front back through the center of the mouth one-and-three quarter inches.

DARDANELLE, Ark., March 18, 1885.

J. W. O'KELLY.

[We have the cast of the jaw of "Sojourner Truth," the colored lecturer, who was a slave in New York before the slave laws of that State were repealed, and who died recently at the advanced age of one hundred and ten. This cast was taken by Dr. George B. Welch, of Washington, from which to make a set of teeth for her. It measures four inches across, and from the front back through the center of the mouth three and-a-half inches.

We think this the largest jaw ever reported.—Ed. ITEMS.]

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*Pyorrhoea Alveolaris*.—In theorizing on, and in treating this disease, we should bear in mind Dr. Ingersoll's important idea that its chief cause is not the common salivary calculus mechanically displacing the surrounding tissues, and thus loosening the teeth, but sanguinary calculus. The latter is not a deposit from the mouth infiltrating itself on the roots. It never was in the mouth, but undoubtedly, as Ingersoll says, "it is the result of the disorganization of the blood, etc., of the tissue immediately surrounding the affected roots." Much of the value of the thorough and skilful mechanical treatment he, and Riggs, and others, persist in cleaning the roots and removing all debris, is that it thus not only relieves the parts of previous irritation, but it produces a normal stimulation of the circulation in the tissues, and brings about their healthy growth.



## CALCIFICATION OF THE TEETH.

At any time prior to the "eruption" of the teeth, the enamel can be effected by hygienic measures, for good or for ill. And I feel sure that enamel may be improved in structure, even after twelve years of age, by proper regimen and diet. I *know* that the dentine may be. The already formed enamel is not as hard before birth as after more months of life.

If a child, at twelve years of age, has teeth poorly calcified, it, undoubtedly, has its bones in the same condition. That condition cannot be ascertained, as the bones are covered with soft tissues. The bones might be as poorly calcified as the poorly calcified teeth of a child, and yet be practically good for use, and grow no worse, while badly calcified teeth easily decay.

I have had a great deal of positive experience in improving the dentos of children from three to twenty years of age. I feel very certain that I have so instructed the expectant mother, as to cause the teeth of her child to be better than her own.

I improved the dentos of my own teeth after I was fifteen years old, by adopting hygienic habits; and I am sure that I have given my six children better dentos than their parents or grandparents had, by the same methods.

ST. LOUIS, MO.

HENRY S. CHASE, M.D., D.D.S.

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*Cheap dentistry* is dear at any price—better pay a fair price for something that is worthy of the name of dentistry, and is efficient to the preservation of the teeth, than to pay half the sum for that which will prove not only wanting in the fullest requirements, but oftentimes actually detrimental to their well being. "Penny wise and pound foolish" is an old adage that applies very forcibly in this direction. Low prices always lead to some retrenchment in the outlay of means or measures, and, of course, the results cannot be of the highest order. *Bear it fully in mind that you do not usually get more than you pay for.* —*The Dental Guide.*

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Editor ITEMS OF INTEREST:—

I think, Doctor, that the old saying "The proof of the pudding is in the eating," is a well-known *fact*, and, as a student, *facts* and *proofs* are what I am looking for. Will you be kind enough to ask Dr. M. A. Webb if he will please give to the readers of the ITEMS the plain facts?

What per cent. of the teeth that come to him with aching and exposed nerves does he save, and what kind of plaster filling does he use?

STUDENT.

## CORRECTION OF IRREGULARITIES.

This is one of the most perplexing operations that the dentist is called on to perform ; yet, long experience and unusual facilities have made this to us comparatively easy. We are daily demonstrating the feasibility of moving the displaced teeth into line and establishing comeliness of the features without pain or discomfort. It is well always to institute treatment early, as the mobility of the organs is greater than when the patient has arrived at adult age.—W. S. ELIOTT.

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*Our Education.* Several years ago, a pharmaceutical student viewing the rapid approach of examination day with nervous apprehension, and lamenting the numerous difficult studies he was required to master, said to a student of mine, "I am sorry now that I took up pharmacy instead of dentistry, for all a dentist has to learn is about the teeth and gums." This may seem absurd, but his opinion of the attainments of the profession is shared by a goodly number of the laity, humiliating though it be ; and yet when we consider the caliber and qualifications of some of our professional brethren we cannot blame them much. The teeth and the gums may seem a small matter, but when we consider the number of individuals whose daily occupation is the care of these organs, it is evident they are important parts of the human economy. That this regard for them is not of recent origin is shown by the sayings of several old writers, among whom is Cervantes, who says : "I had rather they had torn off an arm, provided it were not the sword arm ; for thou must know, Sancho, that a mouth without teeth is like a mill without a stone, and that a diamond is not so precious as a tooth." But that, however, was before the advent of those Good Samaritans who make a brand new set of teeth for five dollars, no charge for extracting.—DR. KEMPTON.

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*For the Pennsylvania Society,* July 28th-31st rates at the Mount-ain House have been reduced from four to three dollars per day, to delegates and their families. Orders for *special* excursion tickets will be issued over all lines of the Pennsylvania & Allegheny Valley Railroad ; usual excursion rates on other lines. Orders or general information can be obtained by addressing W. H. FUNDENBERG, PITTSBURG, Pa., 958 Penn avenue. *Cor. Sec.*

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*There are men* in our conventions who should be brought forward and encouraged ; there are others who so persistently bring themselves forward they should be remanded to the back seats.

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*Be rather desirous* to see how much better you can do, than to point out the defects in what your neighbor has done.

## TEETH WITHOUT PLATES.

It is often very desirable to retain the roots of the natural teeth, specially if they are strong and in a healthy condition, or if they can be made so, because there are a good many methods of inserting teeth by engraving crowns on these roots and making them strong and perfect in every respect, without the annoyance of a movable plate. The resources of the skilful dentist are so numerous that he is not confined to a rut of experience and is not thwarted in his endeavors by a limitation of methods. Those who have made advancement their watchword have devised ways and means which are only to be made known to be appreciated. This advice then is to all—do not insist on methods which may be inferior, but leave the matter to the ripper judgment of your dentist.—*Dental Guide*.

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“*Black Joints.*”—I notice in the June ITEMS a question with reference to black joints in repairing rubber plates, and I take the liberty to express through your valuable journal my opinions and experience in this matter.

I believe it is impossible to prevent the old joints in a rubber denture from becoming black while vulcanizing. While the teeth are being used, particles of food gather between the sections, these become charred by the heat in vulcanizing, and cause the dark line which is such an eye-sore to an admirer of neat work. It is not a difficult matter however, to prevent black joints where you are inserting a new section. I grind the joints the same as I would for a new piece of work, which is as follows: Grind the ends of the contiguous sections so that their entire surfaces touch, and so you cannot see through the joint with the naked eye; then bevel the inner side of the joint slightly to give room for filling with plaster or cement, whichever the workman sees fit to use.

In new work the joints are filled after the flask is separated and the wax is removed, but in repairing I complete my work as if I were going to flask it, then remove the section, see that both sides of the joint are clean, mix a small portion of oxyphosphate cement to the consistency of soft putty and spread over the entire length of the joint, press the section into its proper position and bed in the flask in the usual way. By following this rule the workman will generally be successful in making good joints.

MOUNT FOREST, Canada.

W. A. BROWNLEE, M.D.S.

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*The New Jersey Dental Law* is a good one—perhaps too good; for though it has been “in force” several years it has not been enforced yet. Resistance is sure to defeat the purpose of the law and let its violator off “scott free.”

## MEETING OF STATE DENTAL SOCIETIES.

Indiana, last Tuesday of June, at Lake Maxinknekee. J. E. Cravens, President; R. Van Valzah, Terre Haute, Secretary.

Kentucky, first Tuesday in June, at Louisville. Wm. Van Antwerp, President; E. C. Dunn, Louisville, Secretary.

Mississippi, August 4th, at Jackson. E. E. Spinks, President; W. W. Westmoreland, Columbus, Secretary.

Missouri, second Tuesday in July, at Sweet Springs. D. J. McMillen, President; Geo. L. Shephard, St. Louis, Secretary.

New Jersey, Wednesday, July 15th, at Asbury Park. J. W. Scarborough, President; C. A. Meeker, Newark, Secretary.

North Carolina, second Tuesday in June. W. H. Hoffman, President; J. M. Hender, Fayetteville, Secretary.

Pennsylvania, Tuesday, July 28th, at Cresson Springs. George Elliot, President; W. H. Fundenberg, Pittsburg, Secretary.

Virginia, Tuesday, August 10th, at Charlottesville. J. H. Moore, President; L. M. Cowarden, Richmond, Secretary.

Wisconsin, July 29th, at La Crosse. B. S. Markleim, President; C. A. Southwell, Appleton, Secretary. Examining Board meets July 28th.

*The Annual Meeting* of the National Association of Dental Faculties will be held at the Sherman House, in Chicago, at 11 o'clock A. M., July 31st. By order of the Executive Committee.

H. A. SMITH, *Sec'y.*

C. N. PEIRCE, *President.*

## ARTICLE VII OF THE CONSTITUTION.

MEMBERSHIP:—Any reputable dental college may be represented in this body upon submitting to the executive committee satisfactory credentials, signing the constitution, conforming to the rules and regulations of this body, and paying such assessments as may be made.

*The Fifteenth Annual Session* of the New Jersey State Dental Society will be held at the Coleman House, Asbury Park, Wednesday, July 15, and continue in session three days. Every effort has been made to make this particular session the most memorable of any heretofore held. Interesting papers have been promised from the most eminent in the profession and the society membership have also contributed liberally. The clinics to be held will be made an important feature, and considerable time and attention has been given toward an exhibition of new and important surgical and mechanical appliances for use in dentistry. It is in contemplation to give a grand reception to the visiting members of the profession on one evening to be arranged for. The place is easy of access from everywhere; the cuisine the best; \$2.50 per day the rate; the location superb, within fifty feet of the surf; the hall for sessions attached to the hotel, commodious and cool. All the profession will be welcome.

CHAS. A. MEEKER, D.D.S., *Sec'y.*

## *Editorial.*

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### REGULATING TEETH.

Regulating teeth is a delicate and skilful operation. Perhaps there are fewer dentists successful in this than in any other important dental manipulation. Few comprehend the principles that should govern the process, and still fewer are able to carry them out when theoretically understood. There is no doubt, much depends on thoroughly studying the individual case, and this can hardly be mastered without a good model and articulation of the entire mouth. Trouble attempted to be saved here is trouble during the entire operation. First know well your case—the relative position of the teeth—the good old standbys to serve as standards of measurement and fulcrums of force—the general direction of strain to bring about the desired arch, and the special movement of individual teeth to accomplish this—the obstructions to proper occlusion, and how to overcome them, and how, finally, normal articulation shall preserve the advantages gained. Then again, it is not only the moving of teeth we are to consider, but so placing them that they will maintain one another in their new places. It is not only their proper harmony of position we are to look for, but their proper length with reference to each other and such a champing of the back teeth and adjustment of the front teeth that they will be, as it were, dovetailed into position by their very occlusion, and advantageously do their master's service. This may mean as much the grinding of a cusp or shortening of a whole tooth as change of position.

To accomplish all this nothing can take the place of native skill and ingenuity, and, perhaps not less, the development of good common sense. These must be developed to determine the proper appliances and manipulations; and to comprehend the case from its incipency to its completeness, every act, and every apparatus brought into use must be guided by good judgment.

Yet, however ingenious we may think ourselves, it will not do to rely only on our own resources. The struggles, perplexities and dire extremities of others, which have developed skill and perfected unique appliances and thus taught principles and brought final success, should be studied with the greatest care. Our standard works can be consulted with profit and our current literature abounds with instructions. Some in our profession have been so eminently successful that their mode of procedure has been sought by others not so fortunate. This has resulted in descriptions in our monthly journals that are, perhaps, superior to the instructions of our books. Dr. Coffin's method will

well repay careful study; so will the Patrick process. To give details here would make our article too long. The experiences of many others given in our journals are worth the most diligent perusal.

When once the principles involved, and the appliances to be used, are well mastered, the road to success is not so difficult. In Washington, the other day, I was shown in the laboratory of a leading dentist the models of a young lady's mouth, so peaked and contracted, speech must have been difficult and unnatural, and so unsightly that the features must have been repulsive. I was then taken into the reception room and introduced to the young lady. Though the work was not complete, the change was marvelous. "Do you know yourself?" said I. "Some of my friends say they do not know me, I look so differently. I begin to think I am pretty good looking, now," she replied. And this was a fact, her features had assumed a symmetry and harmony of expression that was charming; and her voice had changed from a squeaking key to a sweet tone that was musical. The Patrick method had chiefly been used in this case.

It is still a question whether the constant force of elastic springs and rubber bands, or the successive steps produced by screws, etc, are better; whether the "heroic method" of quickly changing the position of teeth, or the slower course requiring months to accomplish the final change, is more desirable; whether the added room sought to bring teeth into proper position should be partly by extraction, or wholly by the expansion of the alviolus arch.

But it was not our design at this time to combat or to champion any special plan, but if possible to draw attention: First, to the neglect of this branch of our calling; second, to its importance; third, to the necessity of thorough study to be able to act wisely in managing cases, and fourth, to show that if the principles involved are well understood and the appliances prepared are judiciously employed, the work of regulating teeth is not difficult.

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*Water drinking* is generally a natural demand of the system. In health it is a luxury; in sickness it is often a necessity. To deprive a fever patient of cold water is cruel; often a full draught of it will produce perspiration and overcome the fever. In many diseases, where there is comparative inaction of the digestive organs, copious drinking of water—the temperature regulated by the condition of the system—will force such an activity of the bowels, kidneys and skin as to make a wonderful change for the better. In a case of fever once I drank twenty-two pints of warm water within one hour. Nothing I could take previous to this would produce perspiration. This caused such copious perspiration and vomiting that I had no farther fever; and after a long, natural and recuperating sleep awoke to be myself again.

## EDUCATE YOUR PATIENT.

Many dentists simply do as they are told. A patient calls to have a tooth "pulled."—"Take the chair, if you please, madam. Which is it? Ah, I see;" and out it comes. "Fifty cents, if you please," and the patient is gone. Or, if it is a case of filling,—“Which are the teeth you would like to have filled?—Ah yes, I see.” And these specific teeth were filled *as* directed. If we venture to suggest there are others needing attention, or that the teeth selected should be filled with other material than that selected by our assuming patron, we say it in the timid, deferential manner of a servant; and we graciously thank our patient if she even condescends to say others shall be filled in some future time—"when they shall seem to require it."

This is not the position of a professional man, and we should be ashamed of it. Rather let us assume from the first that our patients come to us because we are able to tell them what should be done—that they have sufficient confidence that only proper work will be done, and this in the best manner.

And while doing our work, we can employ our tongue in no better way than in making our patients intelligent on dental subjects. Of course this can be carried to extremes just as we now often carry light and trifling foolishness to the extreme of familiarity, if not disgust. But if we try very hard, we can assume that our patient has some brains, and that we can therefore venture to talk about some things sensible. Included in such subjects, to divert the attention and better our patient, should be those directly bearing on the teeth.

If our patient is a parent, the well being of children's teeth may be included. It will not be found difficult to show that this is an important subject, and one which should be specially interesting to those having children under their care. It would not be wonderful if our patient should conclude these children shall be the next to visit the dentist.

There are patients with whom we should go farther than this. Mothers should be impressed with the importance of correct living and eating during utero gestation. To deal with such a subject, of course, requires discretion; and to do it so as to be effectual requires much judgment. But no foolish timidity should deter us; and if we assume the dignity of teachers and obtain the confidence of our patients as learners, this class of patients will not often repel us.

By thus educating your patients you make them your living, willing, efficient advertisements, as well as your warm friends.

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*By an inadvertence*, the article in our June number on *Climate, Food and Association*, was credited to Dr. Kingsbury; it was really the product of Dr. James Truman.

## LITTLE THINGS IN THE ART OF COMPOSITION.

## PREFIXES.

In writing and in speaking, we use many phrases and words, which are inelegant and superficial, simply from thoughtlessness. Take a few superfluous prefixes, as instances: "His avocation was arduous and depressing." We mean his vocation; an avocation is a side business, an occasional occupation, not our usual employment.

"Amidst all this confusion he was calm." Why not say "Mid all this confusion he was calm?"

"This contract was disannuled October 1." We mean it was annuled. Two negatives in such words are unnecessary, though allowed by our lexicographers.

"Such a downfall was to be expected." "The downfall of Gladstone's ministry is imminent." Does the prefix *down* make these sentences any more definite, or add anything to the sense? Of course, if there is a fall, it must be a *down* fall.

Why so generally prefix *al* to *though*? as, "although he was wet," "although he knew better."

"Dr. Jones has removed from 125 to 360 Arch street." If he had previously lived at 360 Arch street, he could *re-move* to it, but the writer probably means that Dr. Jones moved there for the first time. So with the word *return*. We cannot *return* to a place from which we never went.

"This is the selfsame question; when shall we be done with it?" Of what advantage is the prefix *self*.

"It is upon this fact I base my argument." Why use the prefix *up*? Is not *on* sufficiently definite? The *up* as a prefix of *on* is always inelegant, superficial and awkward. Who would not prefer to have *up* suppressed in the following sentences? "Upon this subject he studied hard;" "He walked upon the water with ease;" "He looked calmly upon the scene;" "He dwelt upon this proposition with earnestness;" "We stand upon our dignity;" "We differ upon this question."

Until is a word of ancient use that unnecessarily survives unto. We do not say "It has been our impression *unto* this day." But we frequently say "It has been our impression *until* this day—"until now"—"*until* this moment." Cut off the *un*, and see if *till* is not quite as good.

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*The Dental Guide* is a little newspaper, published principally for patients, just commenced by our friend W. S. Elliott, M.D., D.D.S., Danbury, Conn. Of course, it is spicy, practical and popular in its style and matter. Everything that Dr. Elliott does is of this character.



## THE TOBACCO HABIT.

The evils of the use of tobacco is admitted by nearly all—even of its votaries. There are few who do not acknowledge its injury to mind and body, morals and energy—a stain on cleanliness, refinement, and all that goes to elevate, purify and ennoble a—woman. Ah, is it not well we ended our sentence with a *woman*? If it had been a *man* some one would have disputed us. But who will say a cigar, or a quid of tobacco, graces a lady? Does it not rather degrade her in the sight of all men? But, really, have we two standards of morals?—one for our brothers, and a better for our sisters?—one for our sons, and a higher for our daughters?—one for ourselves, and a holier for our wife or our sweetheart? If so, why?

There is no doubt, the tendency of this tobacco habit is downward—in the same direction, and generally more and more in the company of liquor, profanity and vulgarity. The farther down we go the more smoke and filth of tobacco we find, and the more of the noxious fumes and demoniacal revelings of intoxicants. Down there the two are inseparable companions—repulsive, dirty, abandoned. Above, they are sometimes seen apart—do not seem to know each other, and are both so well dressed, so clean, and so well behaved that their characters are disguised. Tobacco produces a thirst water will not quench, and alcohol asks for a narcotic sleep will not supply. Thus they approach each other for what each can give, and their relationship appears; their companionship soon follows. Sooner or later, they clasp hands and carry their victim down, down—down where *ladies* do not like to go.

The higher in the exhilarating atmosphere of all that is good and innocent and satisfying we come, the less of tobacco and rum we find, till we are in association with pure, inspiring woman and heaven.

Tobacco is a weight that hinders our rising to our true ideal of character; it is a loadstone that attracts other pernicious habits; it is a narcotic that enervates body, mind, and spirit. At best, it tends to make a man contented with mediocrity, begets exclusiveness, and blinds us to the social rights of others. If our moral instinct is acute it is a constant reminder that we are doing what we would condemn in others; for we feel that it is a vicious example to our children, an offense to our wife, and an embarrassment to our good influence. It gives no shelter for excuse, no defense we are not ashamed to utter, and we have no benefit to compensate for its evils. To justify its expensiveness, to excuse its filthiness, and to soothe our conscience, we have absolutely no apology. We find no friend commending it in us, no inferior honoring us for it, and no imitator improved by it. It does us no good, but evil, all the days of our lives. It is a useless, expensive, filthy waste, taking our money, consuming our time, and lower-

ing our vitality. It robs us of delicate taste, clear heads, and steady nerves. In business—specially in our business as dentists—it repels patronage, offends customers, and lowers our standing in community.

Said a gentleman to me the other day: “When I commenced the use of tobacco, it was in thoughtlessness; I had no idea of its evils. But I soon found within me a morbid, insatiable appetite demanding more and more frequent indulgence, till finally I would run to the beer shop to stay the thirst tobacco engendered. I gradually neglected business, became careless in my appearance, blunt and uncivil to customers, and, that I might indulge in a smoke, would often neglect important work. In consequence I lost an important situation. My employer told me when I had parted company with tobacco to return. I did return, with a clean mouth, an unshackled will, and an ambition to please. I eschewed tobacco and all the habits and associations it had fastened on me, and, regained my original vigor, promptness, and urbanity. I am a merchant myself now, and I owe my success to the providence of seeing the evils of tobacco and beer, and to the resolution to part company with them.”

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*Thon*.—We referred to this new word a few months since. It is proposed as the impersonal pronoun for he or she, etc. Since then we are informed that the Educational Board of Maine has recommended it to the teachers of that State.

To illustrate the application of the word we will quote one of the laws of the Dental Society of California, which the secretary has kindly sent us:

“SEC. 7. No person shall be entitled to active or associate membership until he or she shall have [has] signed the Constitution and paid the admission fee. If he or she omit [omits] the same [this] until the close of the meeting following that at which he or she was elected, said election shall be void unless otherwise declared by a two-thirds vote of the members present.”

Just substitute the word *thon* for “he or she” and improve the grammar and see how much more euphonious it will read. Thus: Sec. 7. No person shall be entitled to active or associate membership till *thon* has signed the constitution and paid the admission fee. If *thon* omits this till the close of the meeting following that at which *thon* was elected, said election shall, etc. The possessive case of *thon* is equally useful; as, instead of “his or her membership shall be declared forfeited,” read, “*thons* membership shall be declared forfeited.” *Thonself* is used for himself or herself, as, “each shall choose for *thonself*,” instead of “shall choose for himself or herself.”

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*It is a sign of egotism to talk too much.*

## WHAT SHALL WE EAT.

Certainly, we should *not* eat what evidently disagrees with us, no matter how well we like it, or however well it may agree with others. We have our idiosyncrasies in our habit of eating as well as in other things. My father could not tolerate milk; others cannot use eggs; and some are obliged to eschew acid fruits. There are foods, harmless in themselves, but not digestible by some persons. Then again, there are certain conditions of the system or of the digestive organs, during the continuance of which some foods are decidedly hurtful, while at other times they are innocent and nutritious.

"What ye shall eat and what ye shall drink," may be made so prominent in our minds and in our habits, as to make us a nuisance to those about us, and unhappy in ourselves. Yet, as far as circumstances will allow, and with proper moderation, we should select those things that are best for our condition of living, and should do what we can in having them properly prepared. It is folly for a man of sedentary habits to eat what a man of vigorous activities can easily digest, and really requires; so it is unreasonable for one specially using his brain to think he can live advantageously on the same food as the wood-chopper. There are persons in such vigorous health that it seems to make but little difference whether their food is properly or improperly prepared, or, in fact, whether it is raw or cooked. The main thing with them is to have enough. But how ridiculous to ignore the necessities of those who cannot eat in this way. They can maintain good health by carefully following the dictates of their reason and experience, but are miserable when obliged to eat everything set before them. They must discriminate, and should be encouraged to do so.

Many have been benefitted by substituting rich, concentrated food for oat meal, Graham bread, and the various plain, coarse farinaceous foods; others starve on them. In one the sluggish stomach is aroused by these coarse foods by their very mechanical irritation; the other starves because he does not find in them what the system requires. Said a man to me a short time since: "Do you know what cured me of my dyspepsia? You know I was a severe dyspeptic for many years." Of course, I could not tell. "Sand, sir," said he, "eating sand cured me. I took the idea from my chickens. It rouses the activity of the whole digestive apparatus." "But," said I, "how could you eat it? Did it not put all your teeth on edge? The least grit has this effect on mine." "O, no," said he, "such things don't effect my teeth." Now, as different as were our teeth, so different were our stomachs. I do not believe I could eat sand by the handful, but he seems to have eaten it so freely not only with impunity, but with benefit. It is on this principle, as well as by eating the phosphates in the bran, so many are benefitted by "bran bread." Its very coarseness excites peristaltic activity, and this vermicular motion promotes digestion.

*The excessive use of the tooth-brush* has its injurious effects. We have seen fine teeth entirely destroyed by this means. Some teeth are so hard that it requires very much harsh brushing to wear away their surface; but even with these, specially where a gritty dentifrice—or even chalk—is used, the injurious abrasion of the front surface of the teeth is clearly visible. On comparatively soft teeth this action sometimes abrades the tooth-structure to the very nerve before the operator is aware of any injurious effects. The grooves thus made are often ascribed to a disease of the teeth, or, at any rate, to an inherent defect of the teeth. Not long since a business man of intelligence came to me for advice in a case of this kind, in whose front teeth the grooves were very deep, and the teeth excessively sensitive; the nerves could almost be seen. He was astonished when we told him it was through the excessive use of a hard brush and dentifrice, though he admitted he had used both three times a day for years. He said he had been to a noted dental surgeon, who pronounced it the result of a want of lime salts in the blood, and had prescribed the phosphate of lime, but it did not seem to do any good. Of course it did not. As well might he have taken sawdust. His teeth had all to be plated with gold.

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*Filing teeth* to prevent crowding, to obliterate superficial decay, or to obtain space for filling, is considered reprehensible by some. If we had no experience to guide us, we think this view would be universal. Theoretically it certainly looks dangerous, but in practice it is often found advantageous, and seldom injurious. Of course, everything can be carried to extremes. The old practice of using the wedge-shaped file cannot be too freely condemned, and the injudicious use of the ordinary separating file, by which the teeth are made to look like pegs, or the separations are unsightly and unnecessarily severe, is reprehensible. But there is a judicious and beneficial use of the file. Some mouths are really too full, where it is difficult to so increase the arch as to give them room; and if you succeed, the appearance is unsightly. Even the loss of a tooth or two is better than such crowding; but, generally, filing is better than extracting. In proximal decay, specially in the front teeth, we have frequently obliterated half the number of the cavities by the file, or by the bayonet—three-cornered—point in our engine, without our work showing in front, and with great benefit to the teeth. The work produced permanent, self-cleaning separations from the lingual side. By the use of the file, where the tooth is awkward in its position or shape, we have often produced harmony of appearance without any injury to the tooth. In our younger days we were much prejudiced against the use of the file. One day, as we expatiated on its injurious effects, an old gentleman—

an honored physician of the locality—interrupted us by begging us look at his teeth. We certainly found a beautiful, sound, regular and full set. I do not remember that there was a tooth missing, and certainly there was none decayed. Said he, "Thirty-five years ago I had three teeth filled. Several incipient decays were obliterated with the separating file, and two or three of my teeth were very freely filed to give them harmony of appearance and prevent crowding. The dentist gave me a separating file and told me to use it often between my teeth to keep them apart and their surfaces smooth. I have used such a file ever since, and have never since had occasion to have any other dentistry done."

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*Smith's Diagram of Parliamentary Rules* is an excellent companion for a presiding officer of a deliberative assembly. The concise diagram on one sheet, containing all rules, and so arranged as to be instantly of service; is as useful as it is novel. Uriah Smith, Battle Creek, Mich. Price 25 cents.

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### MAN AND HIS GROWTH.

JAMES R. NICHOLS.

Man as a whole, studied in his material or chemical relationships, presents no special points which distinguish him from other forms of animated nature. He has been described as nothing more than a few pounds of solids diffused in a half-dozen buckets of water, and this empirical statement contains elements of truth. Considered as a machine, man presents the most wonderful example of superhuman wisdom to be found in the wide universe. In structural, design and perfection of parts, man is indeed a marvel of complexity and simplicity. Organic and functional offices are conducted with a precision and perfection which cannot be imitated by art. Every functional movement appears to be guided by a superior wisdom, and every process is directed by a subtle force not understood in college laboratories. The starting point of a human being is within the limits of a single cell, and object infinitesimally small, but the seat of great activities. The simplicity of Topsy in Mrs. Stowe's famous story of "Uncle Tom" has excited hearty laughter from many a reader, but not all have considered the profound philosophy which lurks beneath her intuition in the answer she gives to the inquiry, "who made her?" The question is perplexing not alone to poor ignorant Topsy, but to all those who put such questions. Not having been born, she must have "grewed," and in this answer she evades a question the most learned zoologist is not prepared to solve. She was certain that she "grewed," for the careless observation of the simple and ignorant is sufficient to prove that somehow human beings increase in size from year to year, but the *beginning* is covered by a cloud without rift or boundary.

## Miscellaneous.

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### TEETH OF REPTILES AND BIRDS.

Wm. Fisher, of England, says: "Reptiles are divided in four orders—the first, Chelonia, including tortoises, turtles, etc.; the second, Batrachia—toads, frogs, etc.; the third, Ophidia—anguinis, serpents; and the fourth, Sauria, including crocodiles, lizards, chameleons, etc. Almost all reptiles have an endless succession of teeth, though not so widely distributed as in fish. The chelonians, having no teeth proper, the margins of their jaws are sheathed in horny cases, which are variously shaped in accordance with the habits of the animal, being sharp and trenchant in carnivorous, and blunt and rugged in herbivorous species. The type of teeth common to batrachians is a double row arranged in concentric lines on the upper jaw, between which a single row in the lower jaw passes when the mouth is closed. There are many deviations from this rule, however, toads, for example, having no teeth, and the frogs only a single row on the margin of the upper jaw. Others, such as the newt, the salamander, the tadpole and the great extinct labyrinthodon, having each a distinct system of its own. In both groups of serpents, poisonous and non-poisonous, the teeth are strongly recurved, and are simply available for seizing and retaining prey, which is by them invariably swallowed whole. There is one African snake, the *Rachiodon*, without teeth, which feeds entirely on eggs, which reach the œsophagus before being broken by the vertebral processes that project into the œsophagus. In the saurians the teeth are confined to the borders of the jaw, some sharp and others rounded, with a continuous succession of new teeth taking the place of the old, so that the members of this order have the same number of teeth at death as at birth. Regarding birds, Mr. Fisher said, that till quite recently it was supposed there were no examples of teeth in birds to be found, but Professor Marsh, by his numerous discoveries of fossil birds in the cretaceous deposits in the Rocky Mountains, has amply proved the existence of teeth, he having now 150 species of different birds having teeth."

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### HEBRA'S CURE FOR FETID SWEATING OF THE FEET.

Few affections of the skin are more disgusting or more difficult to treat successfully, by the ordinary methods, than fetid sweating of the feet, with or without excessive secretion. One form of treatment seems to be invariably successful, and therefore deserves to be much better known, namely, that devised by Hebra, which, he says, never fails, and recommends to be used in all severe cases. Hebra employed an ointment composed of equal parts of linseed oil and liquefied lead plaster.

This he directed to be spread thickly over a piece of linen large enough to cover the sole and sides of each foot—both feet, in the first place, to be carefully washed and dried. Pieces of linen rag well covered with the ointment he directed to be placed between the toes, so as effectually to separate them and secure thorough application of the ointment. Over this the sock or stocking could be worn with a

light new slipper, and the patient allowed to pursue his or her ordinary calling. This dressing to be repeated every twelve hours for ten or twelve days. The foot not to be wetted after treatment has begun, but wiped when necessary with a dry cloth, or washed with dry bran or other mealy substance, should any part become dirty or caked with old ointment, etc.

Whether mild or severe, all cases are curable by it, and no other method seems to yield such a prompt and satisfactory result. To ensure success, the whole of the skin of the soles and sides of feet and toes must be tanned by the process and gradually thrown off as brown leathery exfoliations in from two to four weeks. *All boots, shoes, slippers, etc., should be discarded; because if worn again the patient is re-infected in three or four months, and gradually becomes as bad as at first.* Stockings or socks should be very carefully cleansed, and disinfected by heat or by steeping in a hot solution of perchloride of mercury (1 in 1000 of water) for several hours before being washed. Neumann directs that Hebra's ointment and dressing should be changed once in three days for nine days, that is, three times altogether, a method not to be relied on in many cases seen in this country.

What I have found to yield the most satisfactory result, in treating a long series of cases, is to have the feet thoroughly washed in hot water, then steeped for a few minutes in a solution of permanganate of potash of the strength of from four to six grains in the ounce of water. The feet are then dried, not to be again wetted until complete exfoliation of the tanned cuticle has taken place.

Hebra's lead plaster ointment is then thickly spread on strips of cloth about  $1\frac{1}{2}$  inch broad, and the foot covered from the toes back over heel as high as the malleoli with these arranged and applied like a scultetus bandage. Each toe should first be wrapped round with a strip of clean rag half an inch broad and thickly spread with the ointment. This dressing should be renewed every twelve hours with fresh rag and ointment, for a period varying from ten to sixteen days, according to the severity of the case and the thickness of the heel skin. In most cases the odor will be very much diminished by the end of the third day, and will not be perceptible by the ninth. The shedding of the skin takes place *parri passu* with the growth of the new cuticle, and may not be completed until the end of the third or even of the fourth week.—DR. J. S. STEWART, in the *Edinburgh Medical Journal*.

#### PARAFFINE.

This wonderful new substance has to-day no successful rival for the insulation of electric wire, and the growth of the demand for this purpose keeps pace with the marvelous growth of the electric lighting system. A single Chicago concern buys paraffine wax by the car-load. Its price is but half that of bees-wax. The demand for paraffine for candles as yet heads the list. Then come needs of the paper consumers. In 1877 a single firm in New York handled 14,000 reams of waxed paper. This year their trade will be 350,000 reams. Not only for wrapping candy is this paper invaluable, but fine cutlery, hardware, etc., incased in wax paper is safe from the encroachment of rust or dampness. Fish and butter, and a score of other articles, are also thus wrapped, and there seems literally no end to the uses found for the paper saturated with this pure hydro-carbon. In the chemist's

laboratory it is invaluable as a coating for articles exposed to all manner of powerful dissolvents; brewers find it a capital thing for coating the interior of barrels; and the maker of wax flowers simulates nature in sheets of paraffine. No fairer substance ever sprung from most unpromising parentage than the snowy, pure, tasteless, opalescent wax which is evolved from the loud-smelling, pitchy dregs of the petroleum still. This comely, impressionable article with all its smooth, soft beauty, defies agents which can destroy the precious metals and cut the hardest steel as water dissolves sugar. Sulphuric and other potent acids have no more effect on ozokerite than spring water. It is alike impervious to acid and to moisture. Its advent seems to have been a special dispensation in this age of electricity. Every over-head electric-light cable or underground conduit or slender wire, cunningly wrapped with cotton thread, all these owe their fitness for conducting the subtle fluid to the presence of this wax. And in still more familiar forms let us outline the utility of this substance. Every gushing school-girl who sinks her white teeth into chewing-gum chews the paraffine wax. Every caramel she eats contains this wax, and is wrapped in paper saturated with the same substance. The gloss seen on hundreds of varieties of confectionery is due to the presence of this ingredient of petroleum used to give the article a certain consistency, as the laundress uses starch. So that a product taken from the dirtiest, worst-smelling of tars finds its way to the millionaire's mansion, an honored servitor. It aids to make possible the electric radiance that floods his rooms, or, in the form of wax candles, sheds a softer luster over the scene. It polishes the floor for the feet of his guests, and it melts in their mouths in the costliest candies.—*Advocate*.

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*A Cure for Hiccough.*—A remedy, tested many times without a failure, is published in the *Popular Science Monthly*, which says it can always be used by some one else on a person who has "the hiccough," and generally by the sufferer himself. You say to your friend something like this: "See how close together you can hold the tips of your forefingers without touching. Now keep your elbows free from your side. You can get your fingers closer than that. They are touching now. There—now hold them so. Steady!" By this time you can generally ask: "Now, why don't you hiccough?" The involuntary tendency to breathe slowly and steadily when the attention is fixed on performing a delicate manipulation counteracts the convulsive action of the diaphragm.

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*To prevent wood rotting* boil it in paraffine. When all bubbling ceases the paraffine will have so completely displaced the sap that it can be preserved indefinitely. This is a good way of drying it also. Some woods cannot be dried either in the sun or artificially without cracking badly. In this way it neither cracks nor warps.

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*Make a hole* in a piece of tin and put on it a little glycerine, and see what a nice microscopic lens you have. The larger the hole the better, if the glycerine remains suspended in it.